



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/590,295 | 08/23/2006 | Yoshihiro Murakami | 294884US0PCT | 6991 |

22850 7590 12/08/2010
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P.
1940 DUKE STREET
ALEXANDRIA, VA 22314

| |
|----------|
| EXAMINER |
|----------|

PERREIRA, MELISSA JEAN

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

1618

| | |
|-------------------|---------------|
| NOTIFICATION DATE | DELIVERY MODE |
|-------------------|---------------|

12/08/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

| | | | |
|--|--|--|--|
| <p align="center">Advisory Action Before the Filing of an Appeal Brief</p> | <p>Application No. 10/590,295</p> | <p>Applicant(s) MURAKAMI ET AL.</p> | |
| | <p>Examiner MELISSA PERREIRA</p> | <p>Art Unit 1618</p> | |

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 12 November 2010 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
- b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
- (a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
- (b) ☐ They raise the issue of new matter (see NOTE below);
- (c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
- (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☐ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
- The status of the claim(s) is (or will be) as follows:
- Claim(s) allowed: _____.
- Claim(s) objected to: _____.
- Claim(s) rejected: _____.
- Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: see below.
12. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). _____
13. ☐ Other: _____.

/Michael G. Hartley/
Supervisory Patent Examiner, Art Unit 1618

/Melissa Perreira/
Examiner, Art Unit 1618

Claim 2,5-7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeGrado et al. (US 5,879,657) in view of Katano et al. (US 5,594,004).

Applicant asserts that DeGrado et al. do not disclose or suggest a "compound capable of binding to glycoprotein IIb/IIIa" in Claim 2 to compounds represented by formula (IV). Applicants submit that based on the overly broad disclosure at column 2 and column 3, lines 1-32 of Katano et al. and the failure to exemplify any compounds within scope of formula (IV) in the claimed invention (e.g. a compound where the "C2-6 alkenylene at B is -CH=CH-), Katano et al. fails to disclose a compound of formula (IV) in the claimed invention with sufficient specificity to permit the artisan to envisage this compound and/or to select this compound from the millions of possible alternatives.

DeGrado et al. teaches of the radiolabeled cyclic compounds which act as antagonists of the platelet glycoprotein IIb/IIIa complex and thus are capable of binding platelet glycoprotein IIb/IIIa. Further the radiolabel may be ^{11}C , ^{18}F , etc. and allows for the radiolabeled cyclic compounds to be used as imaging agents for the method of diagnosing arterial and venous thrombi.

DeGrado et al. was not explicitly used to teach of the compounds of claim 2.

The reference of Katano et al. teaches of the compounds of formula (I) that are GPIIb/IIIa antagonists used for inhibiting the aggregation of platelets and for the treatment of thrombotic disease; A represents wherein R9 represents hydrogen, etc.; B represents C2-6 alkenylene, etc.; Y represents $-(\text{CO})_k\text{-N(R5)-Z-}$ wherein R5 is lower alkyl, etc., k is 0 or 1, Z is $-(\text{CH}_2)_m\text{-CO-}$, etc. and m is 1-3; X represents CH, etc.; R1 and R2 represent $-W-(\text{CH}_2)_i\text{-COOR3}$ wherein W is O; i is 1-4 and R3 is hydrogen, etc.

At the time of the invention it would have been obvious to one ordinarily skilled in the art to utilize any alternatives of the compounds and choose any combination of substituents of Katano et al. Also, all of the embodiments of the disclosure of Katano et al. do not need to be exemplified.

Applicant asserts that DeGrado et al. fails to provide any reasonable basis to select a positron emitting isotope or that the beneficial results obtained thereby would be achieved. Further, in the disclosure of DeGrado et al. the only exemplified radionuclides are ^{125}I , $^{99\text{m}}\text{Tc}$, and ^{111}In , which are not positron-emitting radionuclides and are detected using SPECT.

DeGrado et al. teaches of the radiolabeled cyclic compounds that are antagonists of the platelet glycoprotein IIb/IIIa complex wherein the radiolabel may be ^{11}C , ^{18}F , etc. which allows for the radiolabeled cyclic compounds to be used as imaging agents for the method of diagnosing arterial and venous thrombi. Once the radiolabeled compounds are administered, the presence of thrombi may be visualized using a standard radioscinotographic imaging system, such as PET, SPECT, etc. Also, all of the embodiments of the disclosure of DeGrado et al. do not need to be exemplified.

Applicant asserts unexpected results wherein the contrast medium for thrombus of the present invention is demonstrated to specifically bind to the thrombus and that Applicants are not required to compare "the results of the invention with the results of the invention" as [a]lthough evidence of unexpected results must compare the claimed invention with the closest prior art.

The applicant has failed to compare the closest prior art with the claimed invention as they failed to provide a direct comparison of the accumulation in the thrombus of the platelet glycoprotein IIb/IIIa complexes of DeGrado et al. with the contrast mediums of the instant claims. Applicant has stated that the binding of the contrast agents of the instant claims to thrombus is an unexpected result but the binding of the contrast medium of the instant claims to thrombus is not unexpected as DeGrado et al. specifically states that radiolabeled cyclic compounds that are antagonists of the platelet glycoprotein IIb/IIIa complex, bind to platelet glycoprotein IIb/IIIa and are administered for the method for diagnosing arterial and venous thrombi and thus, bind to thrombus.

Further, the GPIIb/IIIa antagonists used for inhibiting the aggregation of platelets and for the treatment of thrombotic disease.

Also, the compound of the combined disclosures inhibits the GPIIb/IIIa receptor on the surface of the platelets of a thrombus and the compound of the combined disclosures encompasses the compound of the instant claims and is capable of the same functions and has the same properties.

Applicant asserts that Katano et al. does not disclose which compounds are suitable as contrast media for thrombus with PET. In particular, Katano et al. do not disclose or suggest that the compounds represented by formula (IV) of the present invention have a superior effect as a contrast medium for thrombus with PET.

The reference of Katano et al. was not used to teach of contrast media for thrombus with PET but was used to teach that stated above.

The reference of DeGrado et al. was used to teach of the use of radiolabeled (e.g. ^{11}C) cyclic compounds that are antagonists of the platelet glycoprotein IIb/IIIa complex used as imaging agents for the method of diagnosing arterial and venous thrombi via PET.

Applicant asserts that the skilled artisan would have no expectation of how the physiological activity intrinsic to the compound will change in the labeled compound. In contrast, the labeled compounds of the present invention maintain the physiological activity intrinsic to the original compound because the radionuclide is introduced by substituting, for example, one of the carbon atoms in the original compound with a positron emitting radionuclide. Accordingly, the claimed structures of the original compound is maintained.

DeGrado et al. teaches of radiolabeled cyclic compounds that are antagonists of the platelet glycoprotein IIb/IIIa complex wherein the radiolabel may be ^{11}C , etc.

The reference of Katano et al. teaches of the compounds of formula (I) that are GPIIb/IIIa antagonists used for inhibiting the aggregation of platelets and for the treatment of thrombotic disease; A represents wherein R9 represents hydrogen, etc.; B represents C2-6 alkenylene, etc.; Y represents $-(\text{CO})_k\text{-N(R5)-Z-}$ wherein R5 is lower alkyl, etc., k is 0 or 1, Z is $-(\text{CH}_2)_m\text{-CO-}$, etc. and m is 1-3; X represents CH, etc.; R1 and R2 represent $-W-(\text{CH}_2)_i\text{-COOR3}$ wherein W is O; i is 1-4 and R3 is hydrogen, etc.

Therefore, it would have been obvious to one ordinarily skilled in the art to substitute the pharmaceutical compositions of Katano et al. for the cyclic compounds of DeGrado et al. as the compounds of both disclosures are glycoprotein IIb/IIIa antagonists and are used for the method of treating thrombus formation. It would have been advantageous to label the pharmaceutical compositions of Katano et al. with the ^{11}C of DeGrado et al. to visualize the presence of thrombi using the imaging techniques of DeGrado et al. for the method of treating thrombus. Thus, the structures of the original compound is maintained.